

EXHIBIT F

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19 Attorneys for Plaintiffs
20 And All Others Similarly Situated

21 UNITED STATES DISTRICT COURT
22 SOUTHERN DISTRICT OF NEW YORK

23 JOHN NYPL, et al.
24 Plaintiffs,
25 v.
26 JP MORGAN CHASE & CO., et al.
27 Defendants.

Case No.: 15 Civ. 9300 (LGS)

**DECLARATION OF CARL S. SABA IN
SUPPORT OF MOTION TO FILE THIRD
AMENDED COMPLAINT**

1 I, Carl S. Saba, declare as follows:

2 1. I am a partner in the Forensic and Financial Consulting Services Group at Hemming
3 Morse, LLP, certified public accountants, and have been engaged by Plaintiffs' counsel as a
4 consultant in connection with the above-captioned case. I make this Declaration in support of
5 Plaintiffs' Motion to File Third Amended Complaint. Except as otherwise stated, this Declaration is
6 based on my personal knowledge and, if called upon to do so, I could and would testify competently
7 to the facts stated herein.

8
9 **Introduction and Qualifications**

10 2. I am a Certified Valuation Analyst and have been a member of the National
11 Association of Certified Valuators and Analysts since June 2007. I am also a member of the
12 American Society of Appraisers. Among my professional activities, I am a Co-founder and current
13 Chair of the Executive Committee of the Fair Value Forum. I am also a past Board Member and
14 President of the Valuation Roundtable of San Francisco. A current version of my curriculum vitae
15 is attached to this Declaration as Exhibit B.

16 3. I have testified as an economic damages and valuation expert in 15 depositions, and
17 7 trials and arbitrations. I have also been retained in many other litigation matters in which I
18 provided an expert report or declaration that did not result in oral testimony. My prior experience
19 includes expert work in anti-trust litigation matters, and my valuation expertise includes work
20 related to the traded public markets for securities and digital currencies.

21
22 **Assignment and Analysis**

23 1. It is my understanding that Defendants have entered into plea agreements where they
24 disclosed that they conspired to manipulate benchmark exchange rates for the EUR / USD currency
25 pair in the foreign exchange spot markets. Specifically, Defendants engaged in "coordinating the
26 trading of the EUR/USD currency pair in connection with European Central Bank and World
27
28

Markets/Reuters benchmark currency “fixes” which occurred at 2:15 PM (CET) and 4:00 PM (GMT) each trading day”¹.

2. I have been engaged by the Alioto Law Firm and Law Offices of Lingel H. Winters (“Counsel”) to review data pertaining to spot market fix rates, and analyze whether such fix rates has any relationship to the rates charged to retail consumers and businesses (“End-user”) to exchange the EUR / USD currency pair directly with the Defendants.

3. Counsel has provided me with Euro to Dollar exchange rates offered by Bank of America, Citibank, and JP Morgan Chase in purchases made by Counsel on specific days. I have assumed for purposes of my analysis that this data is factually correct, and I have relied upon it accordingly.

4. I compared the exchange rates offered to Counsel in twelve recent transactions, which represent the rates that are charged to End-users, to the European Central Bank spot market fix rate² (“ECB Fix Rate”) on the same days. The chart below summarizes the comparison of the two rates:

Financial Institution	Transaction Date	ECB Spot Fix Rate	End User Bank Rate
JPM Chase	3/28/2017	1.0859	1.1617
JPM Chase	3/30/2017	1.0737	1.1489
JPM Chase	3/31/2017	1.0691	1.1475
JPM Chase	4/4/2017	1.0651	1.1452
JPM Chase	4/5/2017	1.0678	1.1435
Citi	4/6/2017	1.0678	1.1340
BofA	4/6/2017	1.0666	1.1237
Citi	4/7/2017	1.063	1.1301
BofA	4/7/2017	1.063	1.1229
JPM Chase	4/10/2017	1.0578	1.1391
JPM Chase	4/12/2017	1.0605	1.1387
JPM Chase	4/13/2017	1.063	1.1405

¹ Citicorp Plea Agreement, May 20, 2015, ¶ 4(i)

² As published by the European Central Bank.

https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/index.en.html

5. It is my understanding that the End-user rate offered by Defendants to Counsel was based on a benchmark rate plus a handling fee. In order to determine whether the ECB Fix Rate is closely correlated to the End-user rates offered by Defendants, I applied a simple linear regression to the two rates.

6. The linear regression equation applied a formula by which the ECB Fix Rate is used as an explanatory variable ("X") to predict the End-user rate as dependent variable ("Y"). I applied this regression to the above data of transactions occurring between March 28, 2017 and April 13, 2017. I excluded from the data set Citibank and Bank of America transactions, as there were only two of each, and it is my understanding that every financial institution charges a different handling fee which can impact the End-user rate. I focused my regression analysis on the JP Morgan Chase transactions which contained the most data, consisting of eight transactions.

7. The resulting regression equation from the JP Morgan Chase Euro to Dollar transactions was as follows; $Y = 0.8294X + 0.2600Y$

8. I reviewed the output of the regression analysis and noted that the R squared was 95.5%. In a regression analysis, R squared varies between 0% and 100%, and represents a measure of how well the data fits the regression formula. In the case of the JP Morgan transactions between March 28, 2017 and April 13, 2017, the R squared of over 95% indicated a strong fit between the data and the regression line. Below is a chart comparing the actual End-user rate offered to Counsel in the transactions, as compared to the predicted End-user rate based on application of the regression formula to the ECB Fix Rate:

Financial Institution	Date	ECB Fix Spot Rate	End User Bank Rate	Regression Predicted End User Bank Rate	% Difference Between Actual and Regression Predicted End User Rate
JPM Chase	3/28/2017	1.0859	1.1617	1.1606	0.0950%
JPM Chase	3/30/2017	1.0737	1.1489	1.1505	-0.1373%
JPM Chase	3/31/2017	1.0691	1.1475	1.1467	0.0729%
JPM Chase	4/4/2017	1.0651	1.1452	1.1433	0.1621%
JPM Chase	4/5/2017	1.0678	1.1435	1.1456	-0.1821%

JPM Chase	4/10/2017	1.0578	1.1391	1.1373	0.1590%
JPM Chase	4/12/2017	1.0605	1.1387	1.1395	-0.0729%
JPM Chase	4/13/2017	1.0630	1.1405	1.1416	-0.0968%

9. In the above eight transactions, the End-user rate charged for Euro to Dollar exchange by JP Morgan Chase can be predicted with **99.80%** or better accuracy by applying the regression formula to the ECB Fix Rate in the foreign exchange spot market. As noted in the far right column, no variance between the predicted rate and the actual rate exceeds 0.20%. A visual representation of the fit between the predicted and actual end user rates is appended to this report as Exhibit A.

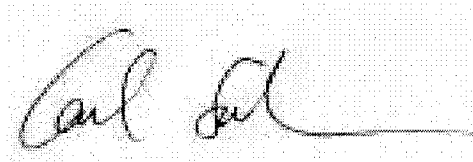
10. Additional evidence of a strong fit of the data to the regression line is contained in the F Probability, which is 0.0027%. The F Probability tests the null hypothesis that all the regression equation coefficients are zero, meaning that there is no relationship between the ECB Fix Rate (X) and the End-user rate (Y). The F Probability indicates the likelihood that the null hypothesis is true, and generally a probability below 5% is considered strong evidence that the null hypothesis should be rejected, and that the regression equation has some validity and predictive power. In the regression equation on the JP Morgan Chase purchases, the F Probability is well below 1%, indicating evidence of predictive power.

11. My review of the limited data provided to me indicates that the ECB Fix Rate on the foreign exchange spot market appears to be strongly correlated with and an accurate predictor of the End-user rates charged by JP Morgan Chase to Counsel. The ECB Fix Rate and the End-user rate appear to move in tandem up and down, in a formulaic manner as predicted by the regression equation. To the extent that Defendants manipulated the European Central Bank fix rate for the EUR / USD pair on the spot market, it is plausible that this would have a direct impact on the exchange rate for the same currency pair charged to retail consumers and businesses by Defendants.

12. I will note that in order to reach a conclusive determination of whether the ECB Fix Rate is a predictor of the End-user rate charged by Defendants, significantly more data must be analyzed over the time period in which Defendants engaged in price manipulation. My results in this declaration are based on the limited data set that was available, and are preliminary in nature.

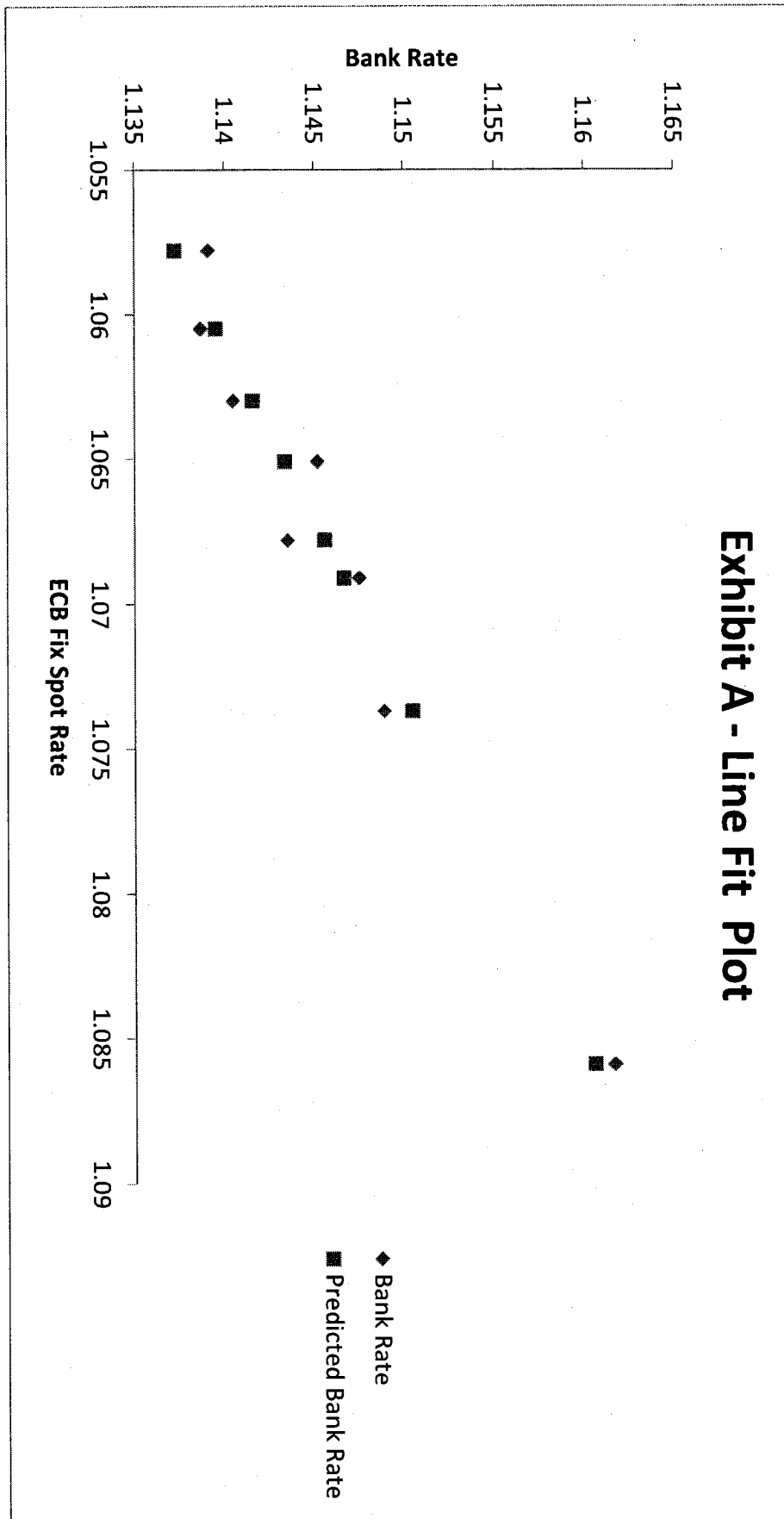
1 I declare under penalty of perjury that the foregoing is true and correct.
2

3 Executed this 3rd day of May, 2017, at Los Altos, California.
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10 CARL S. SABA
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Exhibit A - Line Fit Plot





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Carl S. Saba, MBA, CVA

Executive Summary

Carl Saba is a Partner in the Forensic and Financial Consulting Service Group at Hemming Morse, LLP. He is a recognized leader within the business valuation community, with over twenty years of experience advising companies on complex valuation issues for litigation, mergers and acquisitions, tax, and financial reporting matters. His valuation expertise spans business valuation, valuation of intellectual property and other intangible assets, and valuation of options and other derivatives.

Carl has led in excess of 500 valuation engagements over the last ten years across a broad range of industries with niche expertise in the areas of Technology, Life Sciences, and Medical Device. He has assisted clients as a valuation expert in high exposure situations in initial public offerings, acquisitions, corporate restructure transactions, and bankruptcy reorganizations with transaction values exceeding \$1 billion. He has also assisted clients with resolving valuation disputes with the Internal Revenue Service (IRS), and addressing valuation inquiries and reviews by the Public Companies Oversight Board (PCAOB), and Securities and Exchange Commission (SEC).

On litigation matters, Carl has served as an expert and testified on a wide range of complex business disputes involving economic damages. These have included shareholder dissolution actions, business interruption, unfair competition, patent infringement, alter ego, lost wages, and fraud claims. In most cases, he has been successful in contributing to a favorable award for clients and out of court settlement of the dispute.

Carl also has significant financial advisory experience in mergers and acquisitions due diligence and turnaround management. He has lead due diligence efforts that have assisted his clients in negotiating key deal terms, negotiated with creditors to recapitalize companies, and helped management teams define strategic direction.

Contributing to thought leadership within the valuation community is something Carl is passionate about. He co-founded and currently Chairs the Executive Committee of the Fair Value Forum, a business valuation expert group dedicated to defining best practices within the profession. He also served a term as President of the Valuation Roundtable of San Francisco, and continues several years as a board member. Carl has authored several articles on cutting edge valuation topics, and teaches and lectures on the topic frequently.

Carl has an MBA from the Marshall School of Business at the University of Southern California where he graduated with Honors. He earned his Bachelor's degree at U.C. Berkeley's Haas School of Business. He is a Certified Valuation Analyst with the National Association of Certified Valuators and Analysts.

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Carl S. Saba, MBA, CVA

Employment & Education

- | | |
|----------------|---|
| 2013 – Present | Hemming Morse, LLP
<i>Certified Public Accountants,
Forensic And Financial Consultants</i>
Partner |
| 2004 – 2013 | Burr Pilger Mayer, Inc.
<i>Certified Public Accountants and Consultants</i>
Shareholder, Consulting Practice Group Leader |
| 2003 – 2004 | Comerica Bank, Palo Alto
Vice President / Team Leader |
| 2003 | University of Southern California
MBA, Finance Emphasis <ul style="list-style-type: none">• Graduated in top tier of class with honors• Extensive graduate level coursework in finance theory, valuation, options and decision analysis, statistics, and business strategy |
| 2002 | Decision Education Foundation, Menlo Park
Strategy Consultant, Strategic Decisions Group (Summer Internship) |
| 1999 – 2001 | Comerica Bank, Palo Alto
Vice President / Corporate Banking Officer |
| 1996 – 1999 | Manufacturers Bank, San Jose
Assistant Vice President / Corporate Banking Officer |
| 1995 | University of California, Berkeley
Bachelors degree in Business Administration and Finance |

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Carl S. Saba, MBA, CVA

Professional Credentials

- Certified Valuation Analyst (CVA), National Association of Certified Valuators and Analysts
- Graduate of Leadership San Francisco Class of 2008
- Graduate of Emerging Leaders Academy Class of 2008-2011

Professional Affiliations

- Fair Value Forum
 - Co-Founder
 - Chair, Executive Committee, 2012-Present
 - Executive Committee, 2006-Present
- Valuation Roundtable of San Francisco
 - President, 2011-2012
 - Board Member, 2009-Present
- National Association of Certified Valuation Analysts
- American Society of Appraisers
- American Institute of Certified Public Accountants
- Community Legal Services, East Palo Alto
 - Executive Committee Board Member
 - Treasurer
- Beta Gamma Sigma – National Business Honor Society

Publications

- Co-author of the valuation section of *The 409A Administration Handbook*, Thomson Reuters, 2013 Edition
- *Due Dilligence Can Attract, Support an Acquisition*, North Bay Business Journal, April 2013
- *Purchase Price Allocations Under ASC 805*, A Guide to Allocating Purchase Price for Business Combinations, *BPM Insights*, July 2012
- *A Fresh Start for Your Financials After Chapter 11*, Fair Value Measurements in Reorganization, *BPM Insights*, March 2012
- *Valuation Challenges for Early Stage Companies*, *BV Wire Issue 97-4*, October 2010
- *Stock Options for Life Science Companies*, Understanding the Risks, Realizing the Rewards, *CFO.com*, 2009
- *Future Equity Financing in Early Stage Company Valuations*, Fair Value Forum Whitepaper, 2009
- *Finding Value in Valuations* – The Importance of Valuations for Biotech Companies, *Smart Business*, 2008.
- *Accounting Practices for Medical Technology*, *MX Magazine*, July/August 2007.
- *Hot Issues in Biotech and Life Sciences*, *California CPA*, March/April 2006.

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Instruction and Seminars

- *To Dissolve or Not to Dissolve, the Pros and Cons of Section 2000 of the California Corporations Code*, ProVisors Lawyers and Legal Professionals Affinity Group, April 2017
- *Developments in the Valuation of Early Stage Companies*, AICPA Webcast, June 2016
- *Business Valuation in Litigation: Overview and Case Studies*, American Society of Appraisers Northern California Chapter, June 2016
- *Hot Topics in Early Stage Company Valuations*, Montgomery & Hansen LLP, April 2016
- *What CPAs Should Know About Business Valuation for Estate and Gift Tax Matters*, Crawford Pimentel, January 2016
- *409A Valuation Issues Update*, American Society of Appraisers 2015 Fair Value Summit, November 2015
- *Developments in the Valuation of Early Stage Companies*, AICPA Forensic and Valuation Services Conference, November 2015
- *Stock Transactions as an Indication of Fair Value in Common Stock Valuations*, American Society of Appraisers 2014 Fair Value Summit, November 2014
- *Valuation of Winery Brand and Operations, Building Value in the Wine Business*, The Seminar Group, November 2014
- *Valuation in Dissenting Shareholder Actions, Estate and Gift Tax Matters, and Transactions*, McCormick Barstow LLP, September 2014
- *Damages and Valuation for New or Unestablished Businesses*, Winston & Strawn, May 2014
- *The Continued Appraisal Attack*, 2013 California Tax Policy Conference of the California Tax Bar, November 2013
- *Equity Compensation Valuation Issues - Addressing Situational Requirements When the Guidance is Insufficient*, American Society of Appraisers 2013 Fair Value Summit, November 2013
- *Mergers & Acquisitions: Better Decision Making Through Financial Modeling*, AICPA Controllers Conference, November 2013
- *Auditing Fair Value Measurements under IRC 409, ASC 718, and ASC 805*, OUM & Co. LLP, September 2013
- *Valuation Issues in Chapter 11 Reorganizations*, Inns of Court, San Jose Federal Courthouse, July 2013
- Panelist on *Valuation Issues in Bankruptcy and Financial Reporting*, Association of Insolvency and Restructuring Advisors National Conference, June 2011
- *Alternative Investments, Fair Value Issues*, San Francisco Nonprofit Roundtable, 2009
- *The Guideline Public Company Valuation Method and Minority versus Control Value Conclusion*, Valuation Roundtable of San Francisco, 2009
- *Modeling Techniques for Future Rounds of Equity Financing in Early Stage Technology and Biotech Companies*, Fair Value Forum, 2009
- *Acquired Intangible Assets and Impairment Testing Under FAS 141, 142, 144*, San Francisco State University, 2008
- *FAS 157 and Mark-to-Market or Mark-to-Make Believe Accounting?*, Golden Gate University, 2008
- *Analyzing Financial Statements, and Interpreting Financial Ratios*, Building Owners and Managers Association (BOMA), 2005-2007
- *Valuations of Early Stage Companies*, Frost, and Sullivan Medical Devices Conference, 2007

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Instruction and Seminars *continued*

- *Complex Capital Structures – DCF with Future Capital Requirements and the Impact of Existing Shareholders*, Valuation Roundtable of San Francisco Annual Seminar, 2007
- *Audits of Investments in Private Equity Securities, Are you Ready?*, San Francisco Nonprofit Roundtable, 2007
- *Valuation and Accounting under FAS 123R*, Cal Society East Bay Business & Industry Group, 2006
- Panelist on *Implementation and Valuation Considerations Under FAS 123R*, Cal Society Life Sciences Industry Group, 2006

Testimony

Trial and Arbitration

- **Michael DiSanto v. Bingham McCutchen LLP (2016)**
JAMS Arbitration
Case No. 1110017742
San Francisco County, California
- **Gerald Laurence Trebesch v. Fall Line Capital LLC (2015)**
American Arbitration Association (AAA)
Arbitration No. 01-14-001-0482
San Francisco County, California
- **Ellen Pao v. Kleiner Perkins Caufield & Byers (2015)**
Superior Court
Case Number CGC-12-520719
San Francisco County, California
- **Roxanne E. Doherty v. Michael Doherty (2015)**
Superior Court
Case Number 11CV37584
Calaveras County, California
- **Lehman Brothers Holdings Inc., as Assignee of Lehman Brothers Inc. v. Christopher J. Clifford (2014)**
Financial Industry Regulatory Authority (FINRA)
Arbitration No. 10-04109
San Francisco County, California
- **Evan MacMillan v. Groupon, Inc. (2014)**
American Arbitration Association
Case Number 74 460 00054 13
San Francisco County, California
- **Scomas Restaurant, Inc. (2009)**
San Francisco County, California

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Testimony continued

Deposition

- **Crossfit, Inc. v. Jeff Martin, et al. (2017)**
United States District Court
Case Number 2:14-cv-02277-JJT
District of Arizona
- **Joel Simkhai and Grindr Holdings Company v. KL Grindr Holdings Inc., et al. (2017)**
American Arbitration Association
Case Number 01-16-0003-7637
Los Angeles County, California
- **Clyde Berg v. Speech Morphing Systems (2016)**
Superior Court
Case Number 2014-1-CV-264586
Santa Clara County, California
- **Matthew Ure v. Oracle (2016)**
JAMS Arbitration
Case Number 1100080447
San Francisco County, California
- **California Crane School Incorporated v. National Commission for the Certification of Crane Operators (2016)**
Superior Court
Case Number CV53859
Tuolumne County, California
- **Dellon Chen v. Standard Fiber LLC (2015)**
Superior Court
Case Number CIV521306
San Mateo County, California
- **Lloyds TSB Bank, PLC v. Michael J. Kilroy (2015)**
Superior Court
Case Number INC 1202040
Riverside County, California
- **Ellen Pao v. Kleiner Perkins Caufield & Byers (2015)**
Superior Court
Case Number CGC-12-520719
San Francisco County, California
- **Biotechnology Value Fund, L.P. v. Celera Corporation, Credit Suisse Securities LLC (2014)**
United States District Court
Case Number CV-13-3248-DMR
Northern District of California
San Francisco Division
- **Saul R. Flores v. Group One Construction Inc. (2014)**
Superior Court
Case Number 112CV215989
Santa Clara County, California
- **John K. Palladino v. John Palladino Jr. (2014)**
Superior Court
Case Number CIV512247
San Mateo County, California
- **Roxanne E. Doherty v. Michael Doherty (2014)**
Superior Court
Case Number 11CV37584
Calaveras County, California
- **Evan MacMillan v. Groupon, Inc. (2013)**
American Arbitration Association
Case Number 74 460 00054 13
San Francisco County, California
- **Margery Raffanti v. Estate of Robert Raffanti (2010)**
Superior Court
Santa Clara County, California
- **Scomas Restaurant, Inc. (2009)**
San Francisco County, California

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